NORFOLK COUNTY
CONTRIBUTORY RETIREMENT SYSTEM

Actuarial Valuation Report

January 1, 2005

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Report Summary:

Highlights	January 1, 2003	January 1, 2005
Contributions		
Funding Schedule FY 2006	$28,766,379	$28,766,379
Funding Schedule FY 2007	29,299,388	32,367,511
Funded Ratios		
GAS No. 25	61.5%	61.2%
Participants		
Actives	5,688	5,668
Retired	2,359	2,519
Inactives	1,358	1,633
Disabled	285	295
Total	9,690	10,115
Payroll		
Payroll of Active Members	$185,281,985	$196,639,163
Average Payroll	32,574	34,693
Normal Cost		
Employer	6,869,522	5,976,755
Employee	14,895,770	16,032,112
Administrative Expenses	1,050,000	1,250,000
Total	22,815,292	23,258,867
Actuarial Accrued Liabilities		
Actives	333,731,238	357,866,011
Retirees, Beneficiaries, Disabilities and Inactives	335,608,020	405,034,639
Total	675,275,257	762,900,650
Actuarial Value of Assets	415,150,776	467,186,566
Unfunded Actuarial Accrued Liabilities	$260,124,481	$295,714,084

Introduction

This report presents the Norfolk County actuarial valuation findings as of January 1, 2005, under the Commonwealth of Massachusetts Retirement System.

The actuarial valuation is based on:

- Provisions Chapter 32 of the Massachusetts General Laws, "M.G.L", as of January 1, 2005.
- Employee data provided by the Retirement Board
- Asset information reported to the Public Employee Retirement Administration Commission by the Norfolk County Contributory Retirement System
- Actuarial assumptions approved by the Retirement Board

The valuation and appropriation forecast are prepared in accordance with Chapter 32 of the M.G.L. as of January 1, 2005.

The valuation and forecast do not account for:

- Any subsequent changes in the law
- Chapter 32 of the M.G.L., Section 3(8)(c) transfers between systems
- State-mandated benefits
- Cost-of-living increases granted to retired members between 1982 and 1997. The cost of these benefits has been assumed by the State under Proposition Two and One-Half.

Actuarial Experience

In performing the actuarial valuation, various assumptions are made regarding such factors as mortality, retirement, disability, and withdrawal rates as well as both payroll, salary increases, and investment returns. A comparison of the current valuation and the prior valuation is made to determine how closely actual experience corresponded to anticipated occurrences. This analysis of the system provides insight into the overall quality of the actuarial assumptions and helps explain any change in the annual appropriation.

During the last two years since the last actuarial valuation, the total unfunded actuarial accrued liability increased by 6.6% to $295,714,084. The increase is the result of net unfavorable actuarial experience during the preceding years. The primary component of the unfavorable experience was an annual investment return less than the 8.50% assumption.

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Actuarial Costs and Liabilities:

Normal Costs

The normal cost is the sum of the individual normal costs determined for each member as if the assumptions underlying the cost determinations had been exactly realized. An individual normal cost represents that part of the cost of a member's future benefits which are assigned to the current year as if the costs are to remain level as a percentage of the member's pay. Benefits payable under all circumstances (i.e., retirement, death, disability, and terminations) are included in this calculation. Anticipated employee contributions to be made during the year are subtracted from the total normal cost to determine employer normal cost. The total normal cost is divided by total payroll to determine the normal cost as a percent of pay. The normal cost is shown in Table I.

Table I

	January 1, 2003	January 1, 2005
Superannuation	$14,560,225	$14,149,835
Termination	2,445,001	2,922,279
Death	1,101,603	1,282,093
Disability	3,658,463	3,654,660
Administrative Expenses	1,050,000	1,250,000
Total Normal Cost	22,815,292	23,258,867
% of Pay	12.3%	11.8%
Employee Contributions	14,895,770	16,032,112
% of Pay	8.0%	8.2%
Employer Normal Cost	$7,919,522	$7,226,755
% of Pay	4.3%	3.7%

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Present Value of Actuarial Accrued Liabilities

The actuarial accrued liabilities (AAL) represents today's value of all benefits earned by the actives and inactives. The AAL can be compared to the assets to determine the funded status of the Plan. The value of these earned benefits is shown in Table II below.

Table II

	January 1, 2003	January 1, 2005
Actives		
Superannuations	$311,737,226	$307,511,337
Termination	(6,103,026)	$9,734,275
Death	8,476,791	$12,812,398
Disability	19,620,247	$27,808,001
Retirees and Inactives		
Retired	265,405,643	332,541,110
Vested	0	0
Terminated (Refund)	5,935,999	157,495
Disabled	70,202,377	72,336,034
Total	$675,275,257	$762,900,650

Present Value of Future Benefits

The present value of future benefits represents today's value of all benefits earned by the inactives as well as all benefits earned and expected to be earned in the coming years by the actives. The difference between the present value of future benefits and the present value of actuarial accrued liabilities is the value of benefits to be earned in the coming years. The value of the total expected benefits is shown in Table III.

Table III

	January 1, 2003	January 1, 2005
Actives		
Superannuation	$433,359,071	$426,173,461
Termination	15,128,819	$21,408,496
Death	17,491,265	$22,672,709
Disability	51,010,593	$63,068,941
Retirees and Inactives		
Retired	265,405,643	332,541,110
Vested	0	0
Terminated (Refund)	5,935,999	157,495
Disabled	70,202,377	72,336,034
Total	$858,533,767	$938,358,246

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Funded Status and Appropriations:

Market Value of Plan Assets

The trust fund composition on a market value basis is shown in Table IV.

Table IV

	January 1, 2003	January 1, 2005
Cash equivalents	11,455,770	$9,786,563
Short term investments	1,388,377	1,518,117
Fixed income securities	143,434,067	147,463,896
Equities	148,584,787	245,351,509
International	9,116,651	16,374,557
Real Estate	13,801,936	17,249,050
Venture Capital	0	0
Other	15,401,315	26,260,344
Accounts receivable	2,163,773	6,904,227
Accounts payable	(736,736)	(2,662,622)
Accrued income	1,349,041	1,034,587
Total Market Value	$345,958,980	$469,280,230
Total Actuarial Value	$415,150,776	$467,186,566

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Actuarial Value of Assets

The actuarial value of assets is determined by projecting the actuarial value of assets as of the beginning of the prior plan year with the assumed rate of return during that year (8.5%) and accounting for deposits and disbursements with interest at the assumed rate of return. An adjustment is then applied to recognize the difference between the actual investment return and expected return over a five year period. This preliminary actuarial value is not allowed to differ from the market value of assets by more than 20%. The calculation of the actuarial value of assets as of January 1, 2005 is presented in Table V.

Table V

		January 1, 2005
(1)	Market value at January 1, 2004	$425,887,442
(2)	2004 Contributions	$44,923,350
(3)	2004 Benefit Payments	($49,554,217)
(4)	Net interest adjustment at 8.5% on (1), (2), and (3) to December 31, 2004	$36,003,621
(5)	Expected market value on January 1, 2005 (1) + (2) + (3) + (4)	$457,260,196
(6)	Actual market value on January 1, 2005	$469,280,230
(7)	2004 (Gain) / Loss	($12,020,034)
(8)	80% of 2004 (Gain) / Loss	($9,616,027)
(9)	2003 (Gain) / Loss	($51,702,374)
(10)	60% of 2003 (Gain) / Loss	($31,021,424)
(11)	2002 (Gain) / Loss	$79,286,224
(12)	40% of 2002 (Gain) / Loss	$31,714,490
(13)	2001 (Gain) / Loss	$34,146,490
(14)	20% of 2001 (Gain) / Loss	$6,829,298
(15)	Actuarial value on January 1, 2005, (6) + (8) + (10) + (12) + (14)	$467,186,566
(16)	but not less than 80% nor greater than 120% of (6)	$467,186,566
	Ratio of actuarial value to market value	99.55%

Unfunded Actuarial Accrued Liabilities

Under the Entry Age Normal Actuarial Cost Method, the Actuarial Accrued Liability represents what the accumulated assets would have been as of the valuation date if:

- current plan provisions and assumptions had always been in effect,
- experience conformed exactly to assumptions, and
- the normal cost had been contributed each year since inception.

The actuarial value of the Fund's assets as of the end of the prior year are subtracted from the Actuarial Accrued Liability (AAL) to determine the Unfunded Actuarial Accrued Liability (UAAL) as of the valuation date. Over time, annual pension contributions will accumulate Plan assets equal to the AAL, and the UAAL will be eliminated. Thereafter, annual contributions equal to the normal cost will keep the Plan's assets and liabilities in balance. The UAAL is developed in Table VI.

Table VI

	January 1, 2003	January 1, 2005
Actuarial Accrued Liability	$675,275,257	$762,900,650
Actuarial Assets	415,150,776	467,186,566
Unfunded Actuarial Accrued Liability	$260,124,481	$295,714,084
Funded Status	61.5%	61.2%

Appropriations

The pension appropriation for the upcoming fiscal years have been calculated in accordance with the requirements set forth in Section 22D of Chapter 32 of the Massachusetts General Laws. These amounts were calculated to comply with the June 30, 2028, full funding mandate for all accrued liabilities. The pension appropriation is the sum of the:

- Employer normal cost,
- Increasing amortization of the prior unfunded actuarial accrued liability by June 30, 2028
  $ 282,131,742 over 23 years with 2.5% increasing payments
- Level amortization of the 1992 Early Retirement Incentive unfunded liability by June 30, 2008
  $ 310,678 over 3 years
- Increasing amortization of the 2002 Early Retirement Incentive unfunded liability by June 30, 2028
  $ 8,126,386 over 23 years with 4.5% increasing payments
- Increasing amortization of the 2003 Early Retirement Incentive unfunded liability by June 30, 2028
  $ 5,145,278 over 23 years with 4.5% increasing payments
- Interest adjustment for payments deposited semiannually.

The pension appropriation is shown in Table VII.

Table VII

	January 1, 2003	January 1, 2005
Normal cost	$7,919,522	$7,226,755
Amortization payment of the prior accrued liability	19,454,740	21,379,575
Amortization payment of 1992 ERI liability	112,021	112,113
Amortization payment of 2002 ERI liability	N/A	517,868
Amortization payment of 2003 ERI liability	N/A	327,892
Amortization payment of current (gains)/losses	(2,835,186)	0
Total cost	$24,651,097	$29,564,203
% of Pay	13.3%	15.0%
Fiscal 2006 cost	$28,766,379	$28,766,379
Fiscal 2007 cost	$29,299,388	$32,367,511
Fiscal 2008 cost	$30,186,694	$33,104,903

Appropriation Forecast

The following exhibit forecasts employer and employee contributions over the next 32 years under the adopted funding schedule.

Note that the forecast is based upon an "open group" method. This method assumes that sufficient employees will be hired each year to keep the number constant. The total payroll of the system is expected to increase 4.5% per year. The employee contribution rate is expected to increase to 10.5% by 2028 as members contributing base percentages 5%, 7%, and 8% are replaced by new members, whose base contribution is 9%. Payments are assumed to be spread over the fiscal year.

The employer total cost is expected to increase during the next 20 years until the unfunded liabilities are completely paid off, at which time only the normal cost will remain. The total FY07 cost increase represents 15.8% of payroll, decreasing to 9.5% by the time the unfunded liabilities are fully paid off, leaving only a normal cost of 1.4% thereafter. The decrease in the cost as a percentage of payroll is a result of the increase in member deductions.

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Appropriation Forecast
(amounts in thousands)

Fiscal Year Ending	Payroll*	Employee Contribution	Employer Normal Cost with Interest	Amortization Payments with Interest	Employer Total Cost with Interest	Employer Total Cost % of Payroll	Funded Ratio %**
2006	$196,639	$16,032	$7,681	$21,085	$28,766	14.6	61.2
2007	205,488	16,973	7,794	24,574	32,368	15.8	62.6
2008	214,735	17,966	7,901	25,204	33,105	15.4	64.2
2009	224,398	19,013	8,002	25,731	33,734	15.0	65.9
2010	234,496	20,119	8,096	26,395	34,492	14.7	67.6
2011	245,048	21,286	8,183	27,077	35,259	14.4	69.2
2012	256,075	22,517	8,261	27,776	36,037	14.1	70.9
2013	267,599	23,816	8,329	28,494	36,823	13.8	72.6
2014	279,641	25,186	8,387	29,231	37,617	13.5	74.3
2015	292,225	26,631	8,433	29,987	38,420	13.1	76.0
2016	305,375	28,155	8,466	30,763	39,229	12.8	77.6
2017	319,116	29,762	8,485	31,560	40,045	12.5	79.3
2018	333,477	31,458	8,489	32,378	40,867	12.3	81.0
2019	348,483	33,245	8,476	33,218	41,694	12.0	82.7
2020	364,165	35,129	8,444	34,081	42,525	11.7	84.4
2021	380,552	37,116	8,393	34,966	43,359	11.4	86.1
2022	397,677	39,211	8,320	35,875	44,194	11.1	87.8
2023	415,573	41,418	8,223	36,808	45,031	10.8	89.5
2024	434,273	43,746	8,100	37,766	45,867	10.6	91.3
2025	453,816	46,198	7,950	38,750	46,701	10.3	93.0
2026	474,237	48,783	7,770	39,761	47,531	10.0	94.7
2027	495,578	51,507	7,558	40,798	48,356	9.8	96.5
2028	517,879	54,377	7,311	41,863	49,174	9.5	98.2
2029	541,184	56,824	7,640	0	7,640	1.4	100.0
2030	565,537	59,381	7,984	0	7,984	1.4	100.0
2031	590,986	62,054	8,343	0	8,343	1.4	100.0
2032	617,580	64,846	8,718	0	8,718	1.4	100.0
2033	645,372	67,764	9,111	0	9,111	1.4	100.0
2034	674,413	70,813	9,521	0	9,521	1.4	100.0
2035	704,762	74,000	9,949	0	9,949	1.4	100.0
2036	736,476	77,330	10,397	0	10,397	1.4	100.0
2037	769,618	80,810	10,865	0	10,865	1.4	100.0

* Calendar basis

** As of beginning of the Fiscal Year

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GAS No. 25 and GAS No. 27

Effective for periods beginning after June 15, 1997, the Governmental Accounting Standards Board (GASB) requires the disclosure of pension related liabilities for public employer financial statements in accordance with Statements 25 and 27. These statements, which replace GASB Statement No. 5, must be adhered to by any public employee retirement system that follows Generally Accepted Accounting Principles (GAAP).

These disclosures are intended to establish a reporting framework that distinguishes between:

- current financial information about plan assets and financial activities,
- actuarially determined information from a long-term perspective,
- the funded status of the plan, and
- progress being made in accumulating sufficient assets to pay benefits when due.

Footnote disclosures required by GASB Statement No. 25 and 27 include a description of the plan, a summary of significant accounting policies, and information about contributions, legally required reserves, and investment concentrations. As a result of the oversight of the Public Employees Retirement Administration Commission (PERAC) and the conversion of unpaid contributions to pension related debt, the Net Pension Obligation (NPO) as required by Statement No. 27 will effectively always be equal to $0. The required disclosure information is shown in Table VIII.

Table VIII

		January 1, 2003	January 1, 2005
(1)	Actuarial Accrued Liability	$675,275,257	$762,900,650
(2)	Actuarial Value of Assets	415,150,776	467,186,566
(3)	Unfunded Actuarial Accrued Liability	260,124,481	295,714,084
(4)	Funded Ratio (2)/(1)	61.5%	61.2%
(5)	Covered Payroll	$185,281,985	$196,639,163
(6)	UAAL as a percentage of payroll: (3)/(5)	140.4%	150.4%
(7)	Annual Required Contribution (ARC)	$20,710,277	$28,766,379
(8)	Net Pension Obligation	$0	$0

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PERAC Annual Statement
APPENDIX PAGE 3
ACTUARIAL VALUATION AND ASSUMPTIONS

The most recent actuarial valuation of the System was prepared by Buck Consultants, LLC as of January 1, 2005.

The normal cost for employees on that date was:	$16,032,112	8.2% of pay
The normal cost for the employer was:	5,976,755	3.0% of pay

The actuarial liability for active members was:	$357,866,011
The actuarial liability for retired members was:	405,034,639
Total actuarial accrued liability:	762,900,650
System assets as of that date:	467,186,566
Unfunded actuarial accrued liability:	$295,714,084

The ratio of system's assets to total actuarial liability was 61.2%

The principal actuarial assumptions used in the valuation are as follows:

Investment Return:	8.5%
Rate of Salary Increase:	3.5%/4.0%

SCHEDULE OF FUNDING PROGRESS

Actuarial Valuation Date	Actuarial Value of Assets (a)	Actuarial Accrued Liability (b)	Unfunded Actuarial Accrued Liability (b-a)	Funded Ratio (a/b)	Covered Payroll (c)	UAAL as a percent of Covered Payroll (b-a)/c
01/01/05	$467,186,566	$762,900,650	$295,714,084	61.2%	$196,639,163	150.4%
01/01/03	415,150,776	675,275,257	260,124,481	61.5%	185,281,985	140.4%
01/01/00	371,646,793	533,959,970	162,313,177	69.6%	163,542,978	99.2%
01/01/97	258,771,070	392,463,080	133,692,010	65.9%	126,219,194	105.9%
01/01/93	151,546,609	291,472,940	139,926,331	52.0%	107,482,975	130.2%

Attach Copy of Current Approved Funding Schedule

EXHIBITS

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Age/Service Distribution with Salary as of January 1, 2005

Attained Age	Average Salary <5	5-9	10-14	15-19	20-24	25-29	30-34	35-39	40+	Total
< 20	3	0	0	0	0	0	0	0	0	3
	17,200	0	0	0	0	0	0	0	0	17,200
20-24	132	0	0	0	0	0	0	0	0	132
	20,953	0	0	0	0	0	0	0	0	20,953
25-29	361	26	0	0	0	0	0	0	0	387
	26,678	32,791	0	0	0	0	0	0	0	27,089
30-34	212	133	30	0	0	0	0	0	0	375
	32,978	48,042	48,474	0	0	0	0	0	0	39,560
35-39	256	196	117	44	0	0	0	0	0	613
	30,055	46,499	50,525	51,863	0	0	0	0	0	40,785
40-44	401	211	104	122	14	1	0	0	0	853
	24,049	38,172	48,037	54,806	52,516	45,023	0	0	0	35,358
45-49	439	238	102	136	66	23	3	0	1	1,008
	22,929	31,339	43,537	54,330	55,626	53,124	49,718	0	13,886	34,137
50-54	316	233	97	119	57	68	27	1	0	918
	24,674	29,066	39,152	44,293	57,450	56,638	58,024	77,103	0	35,302
55-59	172	193	100	142	44	48	42	14	0	755
	25,130	29,253	34,809	34,212	49,230	54,758	62,348	69,947	0	35,364
60-64	88	85	49	64	55	26	30	12	1	410
	25,069	28,746	35,875	35,764	41,016	45,686	63,341	63,835	50,979	36,237
65-69	23	32	19	31	20	5	5	2	4	141
	22,992	26,394	32,849	29,176	38,648	28,528	36,658	47,925	61,170	30,790
70+	12	8	6	16	5	9	11	3	3	73
	16,395	28,209	32,573	29,764	31,755	27,347	38,888	30,798	49,350	29,687
Total Employees	2,415	1,355	624	674	261	180	118	32	9	5,668
Average Salary	25,629	35,277	42,722	44,741	49,942	51,796	58,014	62,832	50,844	34,965

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Retiree Distribution as of January 1, 2005

	Number of Employees			Total Payments		
Attained Age	Male	Female	Total	Male	Female	Total
< 20	0	0	0	0	0	0
20-24	1	1	2	8298	1420	9718
25-29	0	0	0	0	0	0
30-34	0	0	0	0	0	0
35-39	1	0	1	2559	0	2559
40-44	3	2	5	59,491	5,943	65,435
45-49	8	3	11	114,981	33,631	148,611
50-54	26	10	36	621,668	156,991	778,659
55-59	116	64	180	4,091,836	796,433	4,888,269
60-64	172	137	309	4,906,059	1,779,708	6,685,768
65-69	173	223	396	4,426,957	3,149,825	7,576,782
70-74	200	235	435	3,810,671	2,737,385	6,548,056
75-79	192	255	447	3,296,353	2,532,649	5,829,002
80-84	132	259	391	1,738,349	1,929,309	3,667,658
85-89	70	148	218	724,203	886,142	1,610,346
90-94	14	55	69	116,347	314,967	431,314
95-99	3	17	20	31,093	92,886	123,979
Total	1111	1409	2520	23,948,865	14,417,289	38,366,154
Average (Age/Payment)	71	75.1	73.3	21,556	10,232	15,225
Frequency Percent	44.1	55.9	100	62.4	37.6	100

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Disabled Retiree Distribution as of January 1, 2005

	Number of Employees			Total Payments		
Attained Age	Male	Female	Total	Male	Female	Total
< 20	0	0	0	0	0	0
20-24	0	0	0	0	0	0
25-29	0	0	0	0	0	0
30-34	0	0	0	0	0	0
35-39	5	0	5	152,519	0	152,519
40-44	9	3	12	257,744	65,327	323,071
45-49	15	3	18	413,341	89,785	503,126
50-54	27	7	34	847,250	144,941	992,191
55-59	51	6	57	1,446,464	61,599	1,508,063
60-64	54	8	62	1,474,691	144,995	1,619,685
65-69	39	5	44	980,979	174,240	1,155,218
70-74	20	3	23	464,269	29,523	493,792
75-79	20	2	22	348,043	22,531	370,575
80-84	15	0	15	244,503	0	244,503
85-89	3	0	3	48,820	0	48,820
90-94	0	0	0	0	0	0
95-99	0	0	0	0	0	0
Total	258	37	295	6,678,622	732,941	7,411,563
Average (Age/Payment)	62.5	59.2	62.1	25,886	19,809	25,124
Frequency Percent	87.5	12.5	100	90.1	9.9	100

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EXHIBIT 4 - CASHFLOW FORECAST:

The following is a 30 year forecast of benefit payments net of state reimbursable COLA payments, Contribution Income and Investment Returns.

Plan Year Ending	Benefit Payments	Employee Contributions	Employer Contributions	Investment Returns	Net change in plan assets
2005	$49,881	$16,032	$28,766	$38,239	$33,156
2006	52,333	16,973	32,368	41,050	38,058
2007	54,665	17,966	33,105	44,223	40,629
2008	56,950	19,013	33,734	47,617	43,414
2009	59,372	20,119	34,492	51,247	46,486
2010	61,953	21,286	35,259	55,133	49,725
2011	64,685	22,517	36,037	59,290	53,159
2012	67,448	23,816	36,823	63,741	56,932
2013	70,529	25,186	37,617	68,502	60,776
2014	73,670	26,631	38,420	73,590	64,971
2015	76,951	28,155	39,229	79,032	69,465
2016	80,378	29,762	40,045	84,852	74,281
2017	83,958	31,458	40,867	91,079	79,446
2018	87,697	33,245	41,694	97,742	84,984
2019	91,603	35,129	42,525	104,873	90,924
2020	95,683	37,116	43,359	112,505	97,297
2021	99,944	39,211	44,194	120,675	104,136
2022	104,396	41,418	45,031	129,423	111,476
2023	109,045	43,746	45,867	138,791	119,359
2024	113,902	46,198	46,701	148,825	127,822
2025	118,975	48,783	47,531	159,575	136,914
2026	124,274	51,507	48,356	171,093	146,682
2027	129,809	54,377	49,174	183,438	157,180
2028	135,590	56,824	7,640	195,741	124,615
2029	141,629	59,381	7,984	206,138	131,874
2030	147,937	62,054	8,343	217,144	139,604
2031	154,525	64,846	8,718	228,797	147,836
2032	161,408	67,764	9,111	241,142	156,609
2033	168,596	70,813	9,521	254,221	165,959
2034	174,255	74,000	9,949	268,163	177,857

amounts in thousands

EXHIBIT 5 – SUMMARY OF PLAN PROVISIONS:

This summary is prepared in accordance with Chapter 32 as of January 1, 2005, and does not take into account any subsequent changes.

1. Administration

Each of the 107 contributory retirement systems for public employees for the Commonwealth of Massachusetts are guided by the applicable provisions of Chapter 32 of the Massachusetts General Laws and other applicable statutes. Although these boards operate semi-independently, there is a uniform set of rules governing benefits, eligibility, contributions, financing, and accounting.

2. Participation

Participation is mandatory for all full-time employees whose employment commences prior to age 65. Eligibility with respect to part-time, professional, temporary, or intermittent employment is governed by the local board. Membership is optional for certain elected officials, State officials appointed by the Governor, and certain hospital interns.

There are four classes of membership as follows:

(i) Group 1: Most general employees in State and local government

(ii) Group 2: Certain specified hazardous duty positions

(iii) Group 3: State police officers and inspectors

(iv) Group 4: Local police officers, firefighters, and designated employees of the municipal light department.

For members in more than one group, participation will be proportional.

3. Salary

Salary is defined as gross regular compensation. Salary does not include bonuses, overtime, severance pay, unused sick leave credit, or other similar compensation.

4. Member Contributions

Member contributions vary depending upon date hired as follows:

Date of Hire	Member Contribution Rate
Prior to 1975	5.0% of Salary
1975 to 1983	7.0% of Salary
1984 to 1996	8.0% of Salary
1996 and Later plus	9.0% of Salary
1979 and Later	2.0% of Salary in excess of $30,000

5. Average Salary

Average salary is used to determine a participant's benefit. It is defined as the average salary during the three consecutive-year period that produces the highest average. (Alternatively, if a greater amount results, it is the average rate of salary earned during the period or periods, whether or not consecutive, that constitutes the last three years preceding retirement.)

6. Creditable Service

In general, creditable service is awarded during the period in which a member contributes to the retirement system.

7. Service Retirement

a. Eligibility:

For an employee to be eligible for service retirement (also referred to as superannuation), one of the following conditions must be met:

(i) completion of 20 years of service

(ii) for an employee hired prior to January 1, 1978, attainment of age 55 as an active member

(iii) for an employee hired on or after January 1, 1978, attainment of age 55 as an active member and completion of ten years of service

(iv) if an employee is a State Police officer (Group 3), attainment of age 50

b. Benefit Amount:

The retirement allowance is determined as a product of the participant's Benefit Rate times Average Salary times Creditable Service, where Benefit Rate is determined from the following table:

Age at	Percentage of Average Salary		
Retirement	Group 1	Group 2	Group 4
65 or Over	.025	.025	.025
64	.024	.025	.025
63	.023	.025	.025
62	.022	.025	.025
61	.021	.025	.025
60	.020	.025	.025
59	.019	.024	.025
58	.018	.023	.025
57	.017	.022	.025
56	.016	.021	.025
55	.015	.020	.025
54	.014	.014	.024
53	.013	.013	.023
52	.012	.012	.022
51	.011	.011	.021
50	.010	.010	.020
49	.009	.009	.019
48	.008	.008	.018
47	.007	.007	.017
46	.006	.006	.016
45	.005	.005	.015
44	.004	.004	.004
43	.003	.003	.003
42	.002	.002	.002
41	.001	.001	.001

For Group 3 (State Police), the benefit is 50% of the participant's final year's rate of regular salary, plus an additional 1% for each year of service in excess of 20 years. In addition, for veterans (all groups) there is an additional benefit of $15 per year for each year of service, up to a maximum of 20 years of service.

8. <u>Deferred Vested Retirement</u>

a. <u>Eligibility</u>:

A participant who has completed ten or more years of creditable service is eligible for a deferred vested retirement benefit. If termination is involuntary, the participant is vested after six years.

b. <u>Benefit Amount</u>:

The participant's accrued benefit is payable commencing at age 55, or may be deferred until later at the employee's option.

c. <u>Refund of Contributions</u>:

In lieu of the deferred pension benefit, a member may elect to receive a refund of their accumulated contributions. Members with ten or more years of service are entitled to 100% of the credited interest on their contributions. Members with five to ten years of service are entitled to 50% of the credited interest on their contributions. No credited interest is provided for members with less than five years of service.

9. <u>Accidental Disability</u>

a. <u>Eligibility</u>:

Participants are eligible for an accidental disability benefit, regardless of service or age, if they become permanently and totally incapacitated for further duty as a result of personal injury sustained while in the performance of duties.

b. <u>Benefit Amount</u>:

The accidental disability amount is 72% of annual salary plus $450 per year for each child plus an additional annuity based upon accumulated Member Contributions with credited interest.

10. Ordinary Disability

a. Eligibility:

An ordinary disability occurs when a member becomes permanently and totally disabled due to sickness or injury that is not job related. In order to be eligible for an ordinary disability benefit, a member must have ten years of service (and be less than age 55).

b. Benefit Amount:

The ordinary disability amount is equal to the accrued retirement benefit as if the member were age 55. If the member was a veteran, the benefit is 50% of the member's final rate of Salary during the preceding 12 months, plus an annuity based upon accumulated Member Contributions plus credited interest. If the participant is over age 55, he will receive not less than the superannuation allowance to which he is entitled.

11. Survivor Benefits

a. Occupational Death:

The survivors of a member who dies due to an occupational injury will be entitled to a lump sum return of contributions plus a pension benefit equal to 72% of the participant's annual Salary.

b. Non-Occupational Death:

Upon the death of a member other than due to an occupational injury, the designated beneficiary will be entitled to a retirement benefit as if Option C had been elected with a minimum of $250 per month to the surviving spouse, plus $120 for the first child, plus $90 for each additional child. If no beneficiary is designated and if the employee worked two years, and is married at least one year, the spouse may elect benefits. If there is no designated beneficiary or surviving spouse, then member contributions are returned. If there are dependent children but no surviving spouse, they may elect minimum survivor benefits of $250 per month plus $120 for the first child and $90 for each additional child.

c. Refund of Contributions:

Upon the death of a member not entitled to survivor benefits, the beneficiary is entitled to a refund of all member contributions with interest.

12. Cost-of-Living Increases

In accordance with the adoption of Chapter 17 of the Acts of 1997, the granting of a cost-of-living adjustment will be determined by an annual vote by the Retirement Board. The amount of increase will be based upon the Consumer Price Index, limited to a maximum of 3.0%, beginning on July 1. All retirees, disabled retirees, and beneficiaries who have been receiving benefits payments for at least one year as of July 1 are eligible for the adjustment. The maximum amount of pension benefit subject to a COLA is $12,000. All COLAs granted to members after 1981 and prior to July 1, 1998 are deemed to be an obligation of the State and are not the liability of the Retirement System.

13. Postretirement Death Benefits

Any benefits following the death of a member after retirement are based upon the form of benefit the participant elected at the time of retirement. There are three available forms as follows:

(i) Option A – Life annuity

(ii) Option B – Life annuity with death benefit equal to excess of member contributions plus credited interest to retirement over annuity benefit paid to member

(iii) Option C – Life annuity with 66-2/3% of benefit continued after death of member to designated joint annuitant

EXHIBIT 6 – ACTUARIAL METHODS AND ASSUMPTIONS:

The actuarial cost method, factors, and assumptions used in determining cost estimates are presented below.

1. Member Data

The member data used in the determination of cost estimates consist of pertinent information with respect to the active, inactive, retired, and disabled members of the employer as supplied by the employer to the actuary.

2. Valuation Date

January 1, 2005.

3. Actuarial Cost Method

The costs of the Plan have been determined in accordance with the individual entry age normal actuarial cost method.

4. Rate of Investment Return

It is assumed that the assets of the fund will accumulate at a compound annual rate of 8.5% per annum.

5. Salary Scale

It is assumed that salaries including longevity will increase at a rate of 3.5% per year for group 1 and 4% per year for group 4.

6. Cost-of-Living Increases

Cost-of-living increases have been assumed to be 3.0% of the lesser of the pension amount and $12,000 per year.

7. Value of Investments

Assets held by the fund are valued at market value as reported by the Public Employees' Retirement Administration Commission (PERAC). The actuarial value of assets is determined using a five-year smoothing of unrealized gains and losses.

8. Annual Rate of Withdrawal Prior to Retirement

Based on an analysis of experience, the assumed annual rates of withdrawal may best be illustrated by the following rates at the following ages:

Service	General Employees	Police and Fire Employees
0	0.1500	0.0150
10	0.0540	0.0150
20	0.0200	0.0000
30	0.0000	0.0000

9. Annual Rate of Mortality

It is assumed that both preretirement and postretirement mortality are represented by the RP-2000 Mortality Table for males and females. Mortality for disabled members is represented by the RP-2000 Mortality Table set forward two years for all disabled members.

10. Service Retirement

Based on an analysis of experience, the assumed annual retirement rates are illustrated at the following ages:

Age	Male General Employees	Female General Employees	Male and Female Police and Fire Employees
50	0.0100	0.0150	0.02000
51	0.0100	0.0150	0.02000
52	0.0100	0.0200	0.02000
53	0.0100	0.0250	0.05000
54	0.0200	0.0250	0.07500
55	0.0200	0.0550	0.15000
56	0.0250	0.0650	0.10000
57	0.0250	0.0650	0.10000
58	0.0500	0.0650	0.10000
59	0.0650	0.0650	0.15000
60	0.1200	0.0500	0.20000
61	0.2000	0.1300	0.20000
62	0.3000	0.1500	0.25000
63	0.2500	0.1250	0.25000
64	0.2200	0.1800	0.30000
65	0.4000	0.1500	1.00000
66	0.2500	0.2000	1.00000
67	0.2500	0.2000	1.00000
68	0.3000	0.2500	1.00000
69	0.3000	0.2000	1.00000
70	1.0000	1.0000	1.00000

11. Annual Rate of Disability Prior to Retirement

Based on an analysis of experience, the assumed annual rates of disability may best be illustrated by the following probabilities at the following ages:

Attained Age	General Employees	Police and Fire Employees
20	0.0001	0.0001
30	0.0003	0.0003
40	0.0010	0.0030
50	0.0019	0.0125

In addition, it is assumed for the general employees that 45% of all disabilities are ordinary (55% are service connected). For police and fire employees, 10% of all disabilities are assumed to be ordinary (90% are service connected).

12. Family Composition

It is assumed that 80% of all members will be survived by a spouse and that females (males) are three years younger (older) than members.

13. Administrative Expenses

The normal cost is increased by an amount equal to the anticipated administrative expenses for the upcoming fiscal year. The amount for fiscal year 2005 is $1,250,000 and is anticipated to increase at 4.5% per year.

EXHIBIT 7 – GLOSSARY OF TERMS:

This glossary summarizes the technical terms contained in this report.

1. **Actuarial Accrued Liability**

   That portion of the Actuarial Present Value of plan benefits that is not provided for by future employer Normal Costs or employee contributions.

2. **Actuarial Assumptions**
   Assumptions as to the occurrence of future events affecting the Retirement System such as:

   - Rates of investment returns
   - Increases in a member's salary
   - Inflation
   - The probability of mortality, turnover, disablement
   - Retirement at each age and other relevant items

3. **Actuarial Cost Method**

   A procedure for allocating the Actuarial Present Value of pension plan benefits between Normal Cost and Actuarial Accrued Liability.

4. **Actuarial Present Value**

   The single sum amount required at the valuation date that is required to provide for anticipated future events based upon the terms of the plan and the Actuarial Assumptions.

5. **Forecast**

   A projection of future benefit payments or contribution requirements based upon the terms of the plan, the current asset amounts, the Actuarial Assumptions, and additional assumptions as to the replacement of terminating employees with new employees.

6. Normal Cost

That portion of the Actuarial Present Value of future benefits that is assigned to the current year.

7. Unfunded Actuarial Accrued Liability

That portion of the Actuarial Accrued Liability that is not provided for by current actuarial value of assets.

8. Valuation Method

The method used to divide the cost of future benefits among the Actuarial Accrued Liability, the current year's Normal Costs, and future years' Normal Costs. The resulting current funding requirement is then determined as the current year's Normal Cost plus the payment necessary to amortize the Unfunded Actuarial Liability.

9. Vested Liability

That portion of the Actuarial Present Value of Accrued Benefits that a member would be entitled to if the member terminated employment with the employer as of the valuation date.

CERTIFICATION:

This report fairly represents the actuarial position of the Norfolk County Contributory Retirement System contributing as of January 1, 2005, in accordance with generally accepted actuarial principles applied consistently with the preceding valuation. In our opinion, the actuarial assumptions used to compute actuarial accrued liability and normal cost is reasonably related to plan experience and to reasonable expectations, and represents our best estimate of anticipated plan experience.

Buck Consultants, LLC

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Daniel W. Sherman, ASA, MAAA
Enrolled Actuary No. 05-4086

December 2005

BREAKOUTS